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Pavement Management Plan
Fiscal Years 2023 – 2027

Message from the Director

April 10, 2023

I'm pleased to present the Pavement Management Plan for Fiscal Years 2023-2027 (PMP). This document is intended to provide the reader with a basic understanding of how pavement systems work, how we make our maintenance and repair decisions, and our plan for street maintenance over the next five years. This plan is a snapshot in time and the location and timing of project will likely change as pavement conditions and other factors change. This Pavement Management Plan is used to prepare the Capital Improvement Program (CIP) that is reviewed and approved by the City Council each year. The actual projects approved for construction in the CIP may differ from what is shown in this plan.

The PMP is the product of many hard-working staff members in Public Works, Finance, and Information Technology. I want to especially thank Cody Stults, Public Works Civil Engineer, who was responsible for developing this plan.

The Public Works Department is dedicated to serving the great community of the City of Ventura. The pride with which we serve our community is reflected in the professionalism and dedication of our staff. We consider public service a vocation to which only a few are called. We take what we do seriously and are proud to have been nationally accredited by the American Public Works Association since 2014.

The Public Works department is a nationally accredited agency by the American Public Works Association

Phil Nelson, P.E.
Public Works Director

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Introduction

Overview

The Fiscal Years (FY) 2023-2027 Pavement Management Plan has been developed to provide the reader with the following:

1. An understanding of how streets function
2. How street pavement is managed
3. Status of the streets in the City of Ventura and California
4. Planned resurfacing and maintenance projects

Since June of 1999, pavement management plans have been developed cyclically to address the City's changing pavement maintenance needs. The Fiscal Years 2023-2027 Pavement Management Plan outlines the City's strategy for streets maintenance, provides an assessment of current network conditions, and recommends projects and funding strategies for ongoing maintenance of the City's streets network through Fiscal Year 2027.

City of San Buenaventura

The City of San Buenaventura, incorporated in 1866, is the county seat of Ventura County. Also known simply as Ventura, it is a quaint beachside community set against a backdrop of undeveloped hills and flanked by two natural rivers located between Los Angeles and Santa Barbara. Much of the City's infrastructure is over 150 years old adding to the challenges of providing essential services to the community. Today, the City of Ventura is a full-service municipality serving 111,000 residents within the 32 square mile city limits. Nearly 700 staff members focus on delivering key services to our businesses, residents and visitors to ensure Ventura remains a fiscally stable, economically vibrant, safe, clean and desirable community.

Pavement Overview

How Pavement Works

Asphalt and Portland Cement Concrete (PCC) pavements are the most common types of roadway surfaces in use in urban and suburban communities throughout the United States today. In principle these pavements are intended to provide support for vehicular traffic loadings that typical ground surfaces cannot support without failing. Designed Asphalt and PCC streets do this by distributing vehicular loadings at the surface of the asphalt or concrete throughout the supporting subsurface layers of the roadway down to the compacted native ground surface (See Exhibit A below).

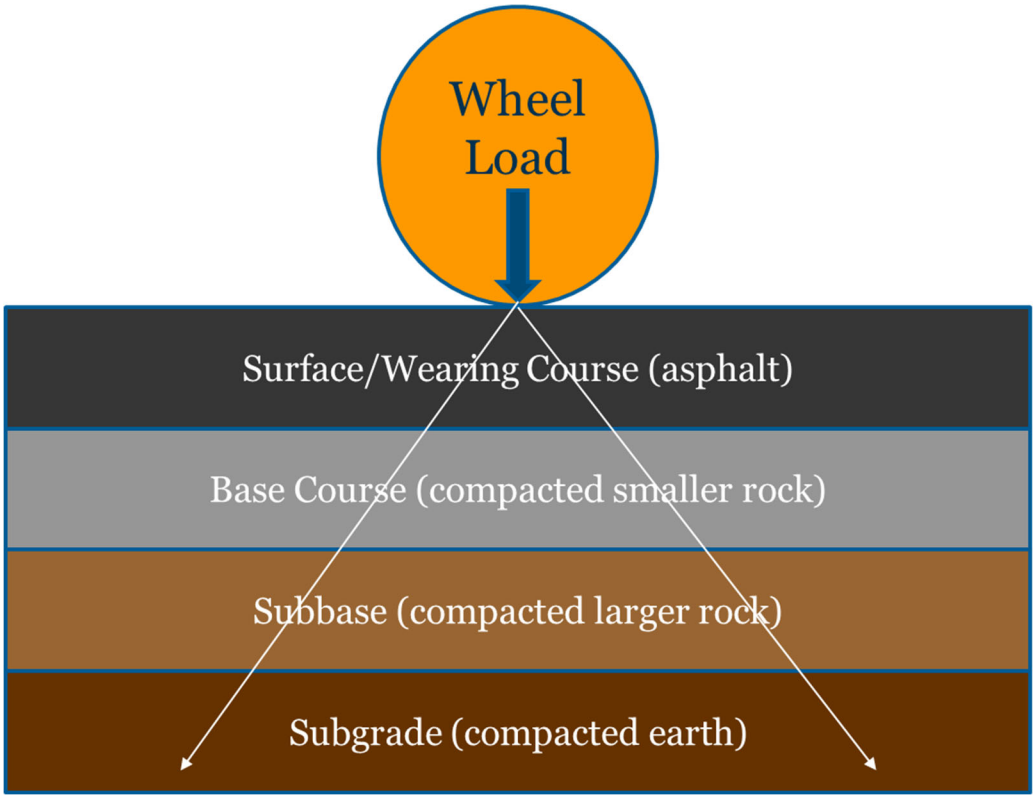


Exhibit A - Load Distribution in Asphalt Pavement

As the wearing course (asphalt surface) is loaded by vehicular traffic, the load is distributed through the base course, subbase, and subgrade respectively; providing a sturdy roadway surface that can support substantial loadings and resist impacts of weathering and water infiltration.

Four Factors of Pavement Deterioration

Asphalt and PCC pavements deteriorate primarily due to four key factors; Traffic Loadings, Sun Damage, Water Damage, and Constructed Quality of the Roadway.

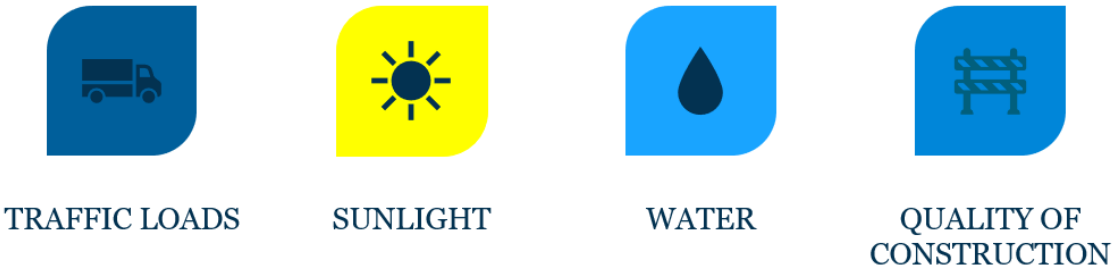


Exhibit B - Four Factors of Pavement Deterioration

Traffic Loading

Of the three key stresses that contribute to pavement deterioration, Traffic Loadings are some of the most predictable. The two factors in Traffic Loading are weight and volume with weight being the more significant. A tractor trailer, for example, can have a load per wheel that is over

8x greater than a small car. Higher traffic volume streets like Victoria Avenue and Telegraph Road deteriorate more quickly as they are more heavily and regularly loaded by vehicular traffic. Similarly, roadways that are used to transport heavy equipment for construction or as routes for semi-trucks will also see an accelerated rate of deterioration due to heavier traffic loadings. Higher speed roadways will also experience accelerated deterioration, particularly at approaches to stop-controlled intersections where vehicles must slowdown from high speeds as they approach.

Sun Damage

Sunlight damage occurs over time as asphalt is exposed to sunlight and oxidizes. As asphalt oxidizes, the chemical bonds that provide the asphalt's structural integrity are destroyed, hardening the asphalt and making it more brittle. This process generally takes years, but is typically indicated by grayish pavement that hardens and becomes more brittle and frail over time. This will result in excessive pavement cracking and/or raveling as the pavement hardens and continues to deteriorate.

Water Damage

Water Damage is the least predictable of the three key stresses that contribute to pavement deterioration. As pavements are exposed to water, there is always the potential that water will penetrate the asphalt through surface cracks, eroding the structural layers beneath the asphalt's wearing course, and even reducing or eliminating the adherence between the asphalt's structural layers. Typically surface indications of this type of damage are alligator cracking, roadway depressions, or potholes after exposure to water.

Constructed Quality of the Roadway

As our roads age after being resurfaced, one key factor of pavement deterioration becomes apparent as a significant contributor to the overall lifespan of our roadways; quality of construction. Many factors contribute to the overall success of a paving project, and there are many ways in which the quality of a paved roadway can be undermined during and prior to construction. Poor mix design, unsuitable placement temperature, high relative humidity, uncorrected sub-grade failures, unsuitable base course material, and even improperly or inadequately rolled asphalt can result in a roadway surface with a significantly reduced lifespan.

Pavement Deterioration Curve

As pavement deteriorates over time, it typically follows a trend of deterioration represented in Exhibit C below.

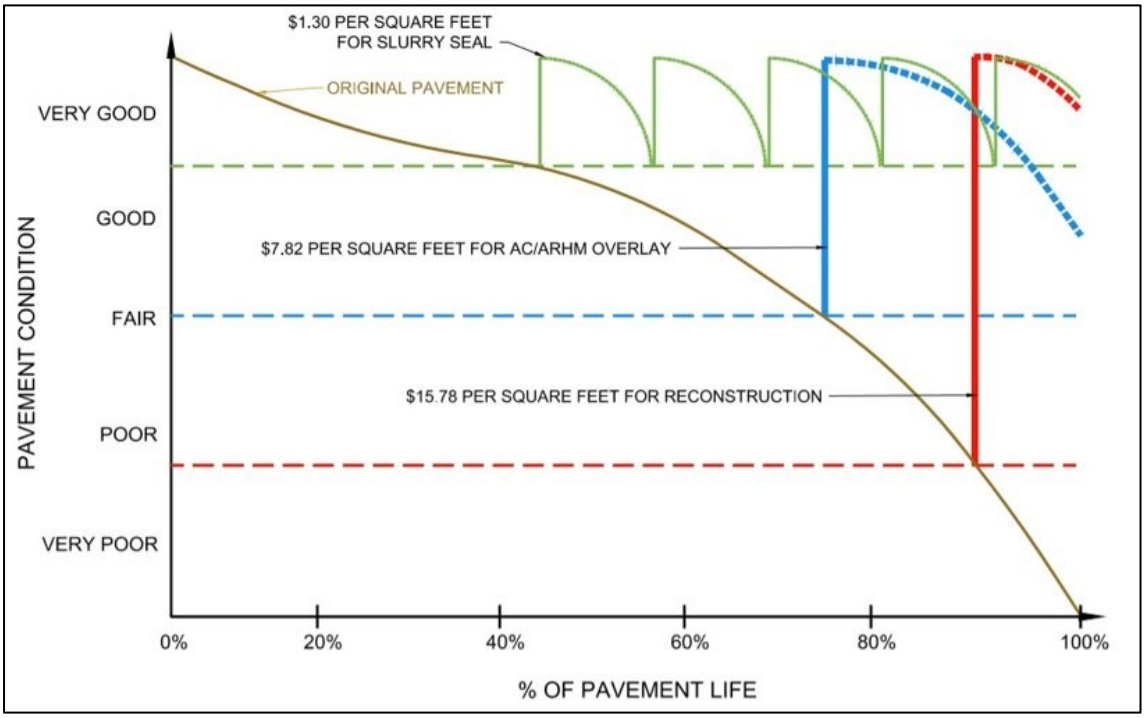


Exhibit C - Pavement Deterioration Curve and Maintenance Costs

Generally, a street's condition will deteriorate slowly during the first 40% of its service life, after which the street's condition will begin deteriorating more quickly. A street's condition will deteriorate rapidly beyond 75% of its service life, which typically occurs 15-20 years after a street is constructed. This life cycle makes preventative maintenance early in the life of a roadway section crucial for cost-effective long-term maintenance. Crack sealing, pavement patching, and seal coats extend the life of roadway sections significantly by reducing the risk of roadway section failure due to wearing and weathering or water intrusion into roadway subsurface structural layers.

Pavement Treatments

Preventative maintenance early in the life cycle of roadway sections is crucial to cost-effective long-term pavement management. Preventative maintenance strategies vary, but three typical roadway treatments are used in coordination with routine maintenance activities to preserve the integrity of roadway sections in the City of Ventura.

Slurry Seals

Slurry Seals are asphalt emulsion-based seal coat treatments that are intended as short-term and cost-effective roadway preservation treatments. A slurry seal is spread on a prepared paved surface to serve as a short-term wearing coarse for the underlying asphalt, with the intent to

preserve the condition of the underlying asphalt and delay failure that would occur over time due to pavement stresses. The effective life of a slurry seal treatment is typically 5-10 years.

Conventional/Asphalt Rubber Aggregate Membrane (ARAM) Cape Seals

Cape Seals are a longer-term pavement preservation strategy that can be very effective for maintenance of low-speed, and low traffic-loaded roadways. A cape seal treatment consists of a combined chip seal and slurry seal treatment. A chip seal is a combination of an asphalt emulsion with a layer of crushed rock. Chip seals provide greater structural integrity than a conventional slurry seal, but create a significantly rougher driving surface. A cape seal mitigates this issue by covering the chip seal with a slurry seal to provide a smoother driving surface and further improve the structural integrity of the roadway section. Cape seals significantly improve the structural integrity of a roadway, and typically extend the life of a roadway section 10-15 years where they can be applied.

Asphalt Concrete (AC)/ Asphalt Rubber Hot Mix (ARHM) Overlays

Overlays are the longest-term pavement preservation strategy currently applied in the City. An overlay is constructed anywhere that the pavement is too deteriorated for a slurry seal or cape seal treatment to be feasible. The existing roadway surface is cold-milled (ground out) several inches, and a new layer of asphalt is placed. This treatment fully reconstructs the roadway surface and will typically extend the life of a roadway section by 20-30 years.

Routine Maintenance and Other Maintenance Strategies

Other short-term maintenance strategies are necessary for responsive and responsible pavement management. Regularly crack-sealing, patching, and filling in potholes can help preserve the condition of deteriorating roadway sections.

Roadways that are deteriorated beyond the effective range of maintenance overlays will require full reconstruction, pulverization, or other reconstructive treatments. In recent years the City has not pursued this maintenance strategy due to budgetary constraints.

Pavement Management System

A Pavement Management System (PMS) is a set of tools for the maintenance, repair, and rehabilitation of the pavement network with the goal of maximizing its value and service life at the lowest cost. Our PMS consists of the five elements shown below.

Exhibit D - Elements of a Pavement Management System

Inventory

The City is responsible for the repair and maintenance of more than 700 lane miles of streets infrastructure, of which 428 lane miles are classified as residential streets, 124 lane miles are classified as collector streets, and 153 lane miles are classified as arterial streets under the State's functional classification designations. The City utilizes a pavement management software called StreetSaver™ to inventory and track the condition of this extensive streets network.

Assessment

Street Conditions

Pavement conditions are assessed and assigned in StreetSaver™ using the industry standard rating metric, the Pavement Condition Index (PCI). PCI's range from 0-100, with 100 being a newly constructed street in optimum condition or a street that has been recently repaved or reconstructed, and 0 being a completely failed roadway. PCI reductions occur over time as stresses such as alligator cracking, rutting, raveling, transverse and longitudinal cracking, and bleeding occur.

StreetSaver™ records inspection data and assigns deterioration curves to roadway segments in the database to both document existing conditions and predict future conditions based on historical trends (See Exhibit E below).

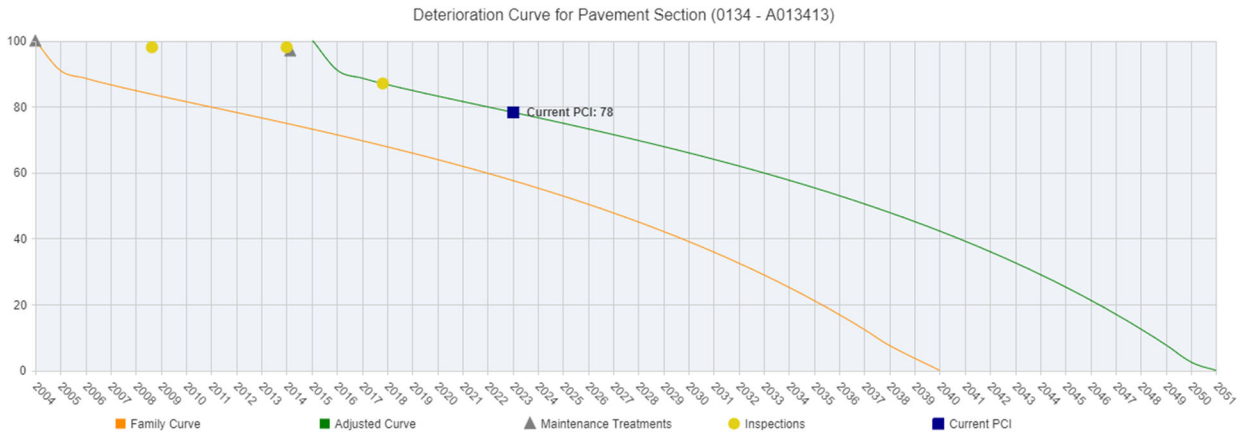


Exhibit E - Sample Deterioration Curve from StreetSaver Database

StreetSaver™ can use this data to predict deterioration of roadways and assist in prioritization and scoping of upcoming maintenance projects.

Strategy

The City utilizes StreetSaver™ to not only track pavement conditions throughout the City's streets network, but also to strategically identify the City's highest maintenance priorities. StreetSaver™ hosts a variety of tools for this purpose, which provide valuable insight and help inform the City's Project Selection Strategy.

The first step in development of the City's maintenance strategy is collection of inspection data. The City performs routine pavement inspections annually to ensure that the PCI's in the StreetSaver™ database reflect actual conditions. Regular inspection data ensures that the deterioration curves and individual segment condition data in the StreetSaver™ database accurately reflect actual conditions. The City is developing a five-year inspection schedule to ensure that accurate inspection data is collected throughout the City's entire streets network every five years.

The City also utilizes the decision tree function in StreetSaver™ to prioritize maintenance projects based on available budget, functional classification, rate of deterioration, average daily traffic, maintenance district, frequency of repair needs, and a variety of other customizable filters. StreetSaver™ prioritizes and reports recommended maintenance based on priorities identified in the City's decision tree, and the City uses these recommendations to inform project selections.

Budgeting

One of the key components in the City's Project Selection Strategy is available budget. Generally, the budgeting focus of project selection is to spend 60% of available funds on maintenance of arterial roadways, spend 20% of available funds on maintenance of collector roadways, and spend 20% of available funds on residential roadways. The key focus here is to prevent roadways

from deteriorating to the "next level" of required maintenance. As roadways deteriorate, maintenance options are reduced, and the cost of maintenance increases significantly.

Execution

Once project prioritization has been completed, projects are formally scoped and scheduled in the Capital Improvement Plan. Scheduled projects will begin design once funds have been appropriated in the scheduled fiscal year and a project manager has been assigned.

Existing City Pavement Conditions

During FY21-22 the City performed pavement inspections and reevaluated the overall condition of the City's streets infrastructure. The inspection data collected was used to update the City's database within StreetSaver™. StreetSaver™ generated an overall condition assessment of the City's streets by functional classification based on these updates; 67 PCI overall for arterials, 65 PCI overall for collectors, and 67 PCI overall for residential streets. Exhibit F describes the results of this assessment in a condition distribution by percentage of pavement square footage throughout the City.

Condition Category	PCI Range	Arterial	Collector	Residential	Entire Network
Very Good	71-100	12.8%	10.1%	34.8%	57.7%
Good	51-70	5.2%	3.4%	14.5%	23.1%
Poor	26-50	3.4%	3.9%	9.3%	16.6%
Very Poor	0-25	0.3%	0.3%	2.0%	2.6%
Total (%)		**21.7%**	**17.7%**	**60.7%**	**100.0%**

Exhibit F - Pavement Condition Breakdown by Classification & Condition

Although the City's streets are in fair condition overall with an average PCI of 66, there has been a notable downward turn in overall PCI since 2003 due to reductions in available funding and increased costs to perform pavement rehabilitation work. In order to maintain our streets in fair condition, additional funding for preventative maintenance is needed.

Alley Conditions

Due to a variable rate of deterioration for alleys, the City has not used the Pavement Condition Index (PCI) as the metric for assessment of alley paved surface conditions. Instead, the City tracks alley conditions through periodic visual inspections, and assigns condition ratings from 1-5, with 5 being a alley in failed condition, and 1 being an alley that is newly paved and in optimal condition.

During FY21-22 the City reassessed the overall conditions of its alleys, resulting in an overall assessed condition of 2.5. Overall alley conditions have improved since 2020 due to an influx of

City Measure O budget dedicated to alley rehabilitation work. This additional funding has allowed the City's maintenance operations staff to complete a significant number of alley paving projects over the past few years, including 16 alleys during FY2021-2022.

Parking Lots and Other Paved Assets

The City also owns and maintains parking lots and paved assets for operational purposes as well. During FY 2021-2022 the City began developing an inventory of these paved assets with the intent of tracking their conditions within the StreetSaver™ database. Tracking these assets is a crucial part of a comprehensive and responsive pavement maintenance strategy. The current timeline for completion of the paved asset inventory and incorporation into our StreetSaver™ database is by the end of FY2022-2023.

Funding Sources

Pavement maintenance throughout the City is funded primarily through two sources; Highway User Tax Account (State Gas Tax) and Road Repair and Accountability Act (SB1) allocations. These allocations currently average approximately $4.6 million annually. The City also utilizes smaller secondary funding sources for some of it's maintenance operations projects, including approximately $1.3 million annually in general fund allocations for in-house paving and streets maintenance operations, and approximately $400,000 annually in Measure O allocations for purchase of paving materials and alley maintenance throughout the City. The City also collects small fees from some of it's maintenance assessment districts for both alley and residential street maintenance.

Funding Sources

The City receives State Gas Tax funding annually to supplement it's Pavement Maintenance Program. Although State Gas Tax revenues have increased nominally over recent years, these increases have not kept up with inflation or increased costs for construction. Over recent years State Gas Tax revenues have lagged due to various economic factors including reduction of miles driven, an expanding pool of drivers of electric and hybrid vehicles, and partial lockdowns enforced during the Covid-19 pandemic. Over the past three years, the City has averaged $2.3 million per year in State Gas Tax revenues, but projected revenues are expected to only increase nominally over the next five years. State Gas Tax funds are primarily allocated for streets maintenance projects, but some funding may be appropriated for minor traffic safety and transportation improvement projects.

The California Senate passed The Road Repair and Accountability Act in April of 2017, committing to an investment of $54 Billion over a decade to fund maintenance and rehabilitation of roads, freeways, and bridges across the state. The City receives funding for pavement maintenance annually through the Local Streets and Roads Program (LSRP) that was established as a result of the Road Repair and Accountability Act. Since establishment of the LSRP, the City has received

an average annual revenue of $1.6 million through the program, with anticipated revenues projected at $2 million/year over the next five years.

Both the State Gas Tax and revenues from the Road Repair and Accountability Act are intended to supplement municipal streets infrastructure maintenance. However, the City currently uses SB1 and Gas Tax revenues as the primary source of funding for streets capital paving projects. To maintain our streets infrastructure and improve our overall pavement conditions, new funding sources will need to be identified.

Through established Maintenance Assessment Districts the City also collects revenue annually for paving work. The revenue collected is intended to fund targeted maintenance work within the established districts, and is collected as an assessed parcel tax specific to the properties within these districts. These revenues and associated districts are described approximately in Exhibit G below.

Assessment District #	Alley Asphalt Paving Revenue	Streets Resurfacing Revenue
MAD 20	$1,000/yr	$21,000/yr
MAD 22	N/A (PCC+Pavers)	$3,100/yr
MAD 23	N/A (PCC+Pavers)	$13,000/yr
MAD 24	N/A (Included in Streets Rev.)	$16,000/yr
MAD 26	N/A (PCC+Pavers)	$12,800/yr
MAD 27	N/A (PCC+Pavers)	$49,000/yr
MAD 28	N/A	$3,000/yr

Exhibit G - Maintenance Assessment District Revenues

Funding Needs

Pavement maintenance is recommended to be performed cyclically based on a roadway's level of service and rate of deterioration. Generally, the rule of thumb is that roadways should be slurry sealed every seven-ten years and overlaid every twenty-thirty years. At current funding levels, the City cannot perform maintenance at this recommended frequency.

If the City maintains current funding levels for pavement maintenance, the City's overall PCI is expected to fall from 66 to 64 in the next five years. If current funding levels are maintained further, it is expected that within ten years the City's streets network will fall to an overall PCI of 59. At that point most of the City's streets network will require maintenance overlays, pulverization, or reconstruction; drastically increasing the cost to bring the City's streets network back into good condition. It is far more cost effective to bring the City's streets infrastructure into good condition and maintain it than to allow continued deterioration until needed repairs are virtually cost prohibitive. Exhibit H below describes the City's historical PCI trends as well as projected PCI's based on various funding scenarios.

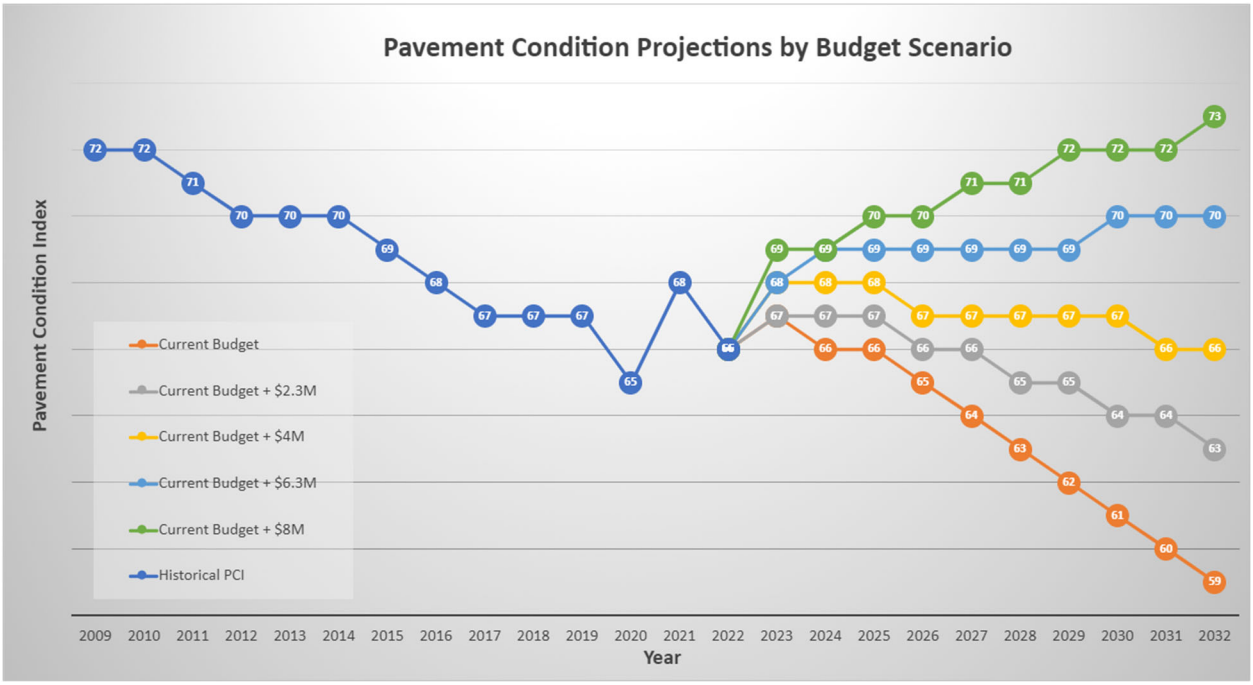


Exhibit H - Pavement Condition Historical Trends and Projections

As shown in Exhibit H, current funding levels are not sufficient to maintain the City's overall PCI of 66. To maintain the City's current overall pavement conditions through FY 2027, a minimum $2.3 million/year additional investment is required, totaling $8.6 million annually for CIP and operations paving projects. To maintain existing conditions beyond FY 2027 or raise the City's overall PCI even more funding is required.

The State Average Municipal PCI was determined to be 66 in the most recent Statewide Local Streets and Roads and Needs Assessment completed in 2021. The target PCI for municipalities is typically above 70. For the City to reach and maintain 70 PCI an additional $6.3 million/year investment would be required, totaling $12.6 million annually for CIP paving projects.

The Public Works Department recommends additional investment to bring the City's streets network into "good" overall condition at or above 70 PCI. As our streets network continues to deteriorate, the cost to bring the network back into good condition increases significantly. Our most cost-effective strategy is to bring our streets network into good condition, and maintain it there. Deferring maintenance restricts the City's ability to perform preventative maintenance that could preserve the conditions of our streets before they deteriorate into worse conditions where seal coat treatments and routine maintenance are no longer effective.

Statewide Needs Assessment

Through partnerships between various regional, local, and state organizations a statewide Local Streets and Roads Needs Assessment is developed every few years. The intent behind the needs

assessment is to assess conditions of streets infrastructure in communities throughout the state and identify unmet needs and unaddressed funding shortfalls for maintenance.

In August of 2021 the most recent iteration of the Local Streets and Roads Needs Assessment was published.

Overall the state's pavement conditions were rated within the "at-risk" category with an average overall PCI of 66. The Ventura County average PCI was rated at 68, slightly above the statewide average. However, the City currently maintains an average PCI of 66.

Note: The Statewide Local Streets and Roads Needs Assessment identifies network PCI's between 50 and 70 as falling within the "at-risk" category. The Statewide Local Streets and Roads Needs Assessment's identified condition categories vary from those utilized within the City's StreetSaver™ database.

Based on overall assessed conditions, the assessment also identified an unmet funding need across the state. At current funding levels, the statewide average PCI is expected to fall from 66 to 59 by 2030. To maintain the current statewide average PCI of 66, an estimated additional $3.84 billion/year is expected to be required. These funding shortfalls are not currently expected to be addressed by projected SB1 and State Gas Tax allocations. To maintain the City's average PCI within the State's identified "at-risk" category, additional funding sources will need to be identified.

The key strategy for addressing the deteriorating condition of roadways both locally and throughout the state is to commit funding to perform maintenance early in the life cycle of our streets to prevent escalating costs for maintenance due to deterioration. The general rule of thumb is that it costs significantly less to maintain streets in good condition, than to wait to repair long-term failure or damage. Once network average PCI's have fallen into the "poor" condition category, the cost to bring the network back into the "at-risk" or "good" condition categories is drastically increased.

How Resurfacing Decisions Are Made

Project Selection Strategy

A variety of factors are taken into consideration when identifying and scheduling resurfacing projects. Functional classification, average daily traffic volume, public safety concerns, rate of deterioration, current pavement condition, private development and CIP project construction timelines, available budget, project location(s), and a variety of other factors inform the City's Project Selection Strategy.

Although many factors are considered through the project selection process, the key factor that dictates the City's maintenance strategy is the overall assessed condition of the City's streets network, typically represented by the Pavement Condition Index. To strategically identify the City's highest maintenance priorities, the City utilizes StreetSaver's™ decision tree function to prioritize maintenance projects with a focus on improving overall PCI of the City's extensive

streets network. StreetSaver™ recommends maintenance projects, and based on StreetSaver™ recommendations, PCI, and field-inspected conditions, the City identifies Overlay, Cape Seal, and Slurry Seal projects.

Slurry Seal and Cape Seal projects are identified primarily to preserve streets that are still in relatively good condition within the 60-80 PCI range. Seal coat treatments are effective for minimizing long-term maintenance costs by addressing maintenance needs early in a street segment's life cycle, before substantial deterioration can occur. Once a street has deteriorated beyond 60 PCI, typically overlay or reconstruction work is required, significantly increasing the cost of maintenance.

Overlay projects are identified for streets that have deteriorated beyond conditions in which seal coat treatments are effective. Overlay work is costly, typically 6-8 times the cost of a conventional type 2 slurry seal, so preventative maintenance should be prioritized wherever possible to prevent deterioration beyond conditions in which seal coat treatments are effective.

Project Funding Strategy

Once projects have been identified based on treatment type and priority, funding decisions are made. The City relies upon an annual budget of $4.6 million for CIP paving projects, and an additional roughly $1.7 million for in-house maintenance and paving operations. With an annual budget totaling roughly $6.3 million to maintain more than 700 lane miles of streets infrastructure, the City has to be strategic when identifying and scheduling projects.

CIP paving projects are focused upon maintenance of major thoroughfares throughout the City, including all of the City's arterial roadways and major collectors, and larger-scale neighborhood paving projects. $1million/year is dedicated to slurry/cape seal treatments, and $3.6 million/year is dedicated to overlay work. These funding levels allow the City to overlay roughly 450,000 square feet, and slurry seal roughly 750,000 square feet of streets infrastructure annually. With more than 66 million square feet of streets infrastructure to maintain, City staff strategically identify projects not only to improve overall PCI in the City's streets network, but also to address the various factors considered in the City's Project Selection Strategy.

In-house paving operations are focused upon maintenance of minor collector and residential streets throughout the City. Approximately $1.7 million/year is dedicated to in-house paving operations and routine maintenance like crack-sealing, pavement patching, and pothole filling. At current funding levels, the City's maintenance operations paving crew is able to pave roughly 250,000 square feet annually, focused within residential areas throughout the City.

Planned Projects FY23-27

The list of projects proposed in this Plan take into account the PCI, benefit-cost analysis of timely pavement treatment, traffic volumes, and available funding. The tables below list the planned paving projects for the five-year period addressed in this Plan, including five years of proposed

CIP paving projects and five years of proposed in-house paving projects. Our maintenance operations paving needs change regularly, so a five-year project plan has been developed including two years of scheduled paving projects and three years of potential candidate projects that have not been scheduled yet.

Five-Year CIP Paving Plan

Year	Project		Lane Miles	Cost Estimate
FY22-23	FY22-23 Annual Slurry Seal Project		19.29	$1,000,000
FY22-23	Bristol Road (Johnson-Ermine)		4.68	$1,942,000
FY22-23	Navigator (Spinnaker-Anchors Way)		2.41	$1,200,000
FY22-23	Valentine (Telephone-Palma)		0.79	$415,000
		Totals	**26.30**	**$4,557,000**
FY23-24	FY23-24 Annual Slurry Seal Project		15.95	$1,000,000
FY23-24	Telegraph (Ashwood-Victoria)		10.25	$4,486,000
		Totals	**26.20**	**$5,486,000**
FY24-25	FY24-25 Annual Slurry Seal Project		19.51	$1,000,000
FY24-25	Darling (Wells-Campanula)		1.17	$525,000
FY24-25	Petit (Telegraph-Foothill)		1.47	$650,000
FY24-25	North Bank Drive (Elba-Johnson)		1.08	$500,000
FY24-25	Victoria (Valentine-Olivas Park Drive)		6.09	$2,750,000
		Totals	**29.32**	**$5,425,000**
FY25-26	FY25-26 Annual Slurry Seal Project		18.66	$1,000,000
FY25-26	Victoria (Ralston-Valentine)		7.10	$3,225,000
		Totals	**25.76**	**$4,225,000**
FY26-27	FY26-27 Annual Slurry Seal Project		19.57	$1,000,000
FY26-27	Ondulando Area Resurfacing		7.25	$3,250,000
		Totals	**26.82**	**$4,250,000**

Exhibit I - Five-Year Scheduled CIP Paving Plan

Five-Year Scheduled In-House Paving Plan

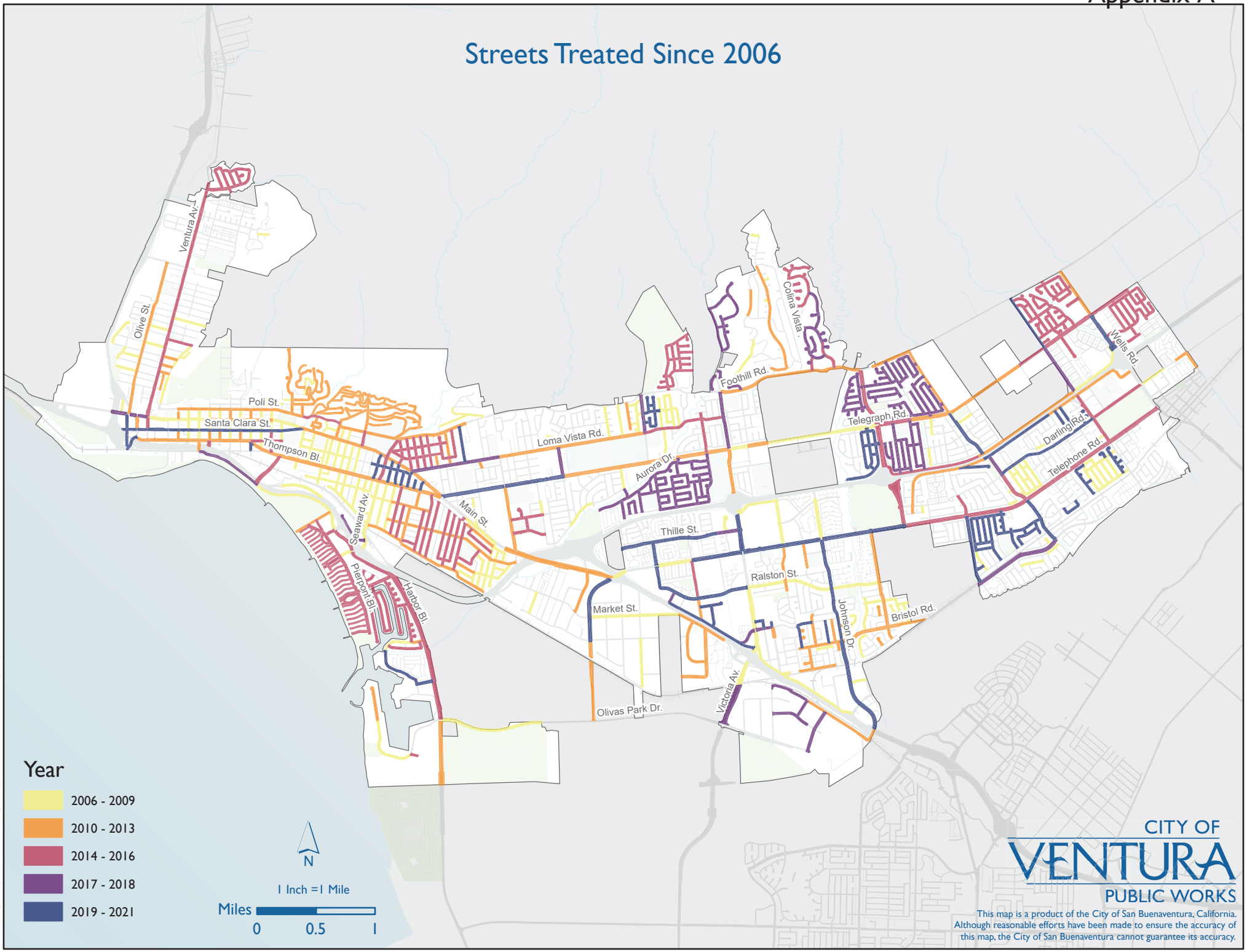
Year	Project		Lane Miles	Cost Estimate
FY22-23	Palma (Olivas-end of CDS)		0.44	$55,000
FY22-23	Scandia (Darling-Telephone)		0.80	$77,000
FY22-23	Palm Street (Main-Santa Clara)		0.80	$33,000
FY22-23	Albatross (Partridge-Johnson)		0.31	$50,250
FY22-23	Partridge Drive (Johnson-Partridge Pl)		0.61	$29,000
FY22-23	Partridge Place (Partridge-end of CDS)		0.39	$8,000
FY22-23	Thrush (Partridge-Albatross)		0.30	$22,000
FY22-23	James Ave (Bristol-Bell)		0.14	$29,250
FY22-23	Bell Street (6268 Bell-Hill)		0.33	$20,000
FY22-23	Clara Street (James-Katherine)		0.27	$23,750
FY22-23	Katherine Avenue (Bristol-Bell)		0.33	$33,250
		Totals	**4.72**	**$380,500**
FY23-24	Crowley (Sunridge-Johnson)		0.71	$53,250
FY23-24	Mandrill (Bristol-Lemur)		0.74	$56,500
FY23-24	Jasper (Telephone-Darling)		0.89	$68,500
FY23-24	Antelope (Marmota-Ralston)		0.38	$34,500
FY23-24	Marmota (Antelope-curve)		0.07	$11,750
FY23-24	Finch (Cardinal-Ralston)		0.14	$9,250
FY23-24	Cardinal (Robin-end of CDS)		0.91	$78,500
		Totals	**3.84**	**$312,250**
FY24-25	Thille (Kimball-Sterling)		1.20	$107,500
FY24-25	Hummingbird (Waxwing-Peacock)		0.49	$34,000
FY24-25	Waxwing (Quail-Nightingale)		0.53	$35,000
FY24-25	Scoter (Quail-Nightingale)		0.55	$35,000
FY24-25	Quail (Sunridge-Scoter)		0.48	$47,250
FY24-25	Hummingbird cul-de-sac		0.14	$21,000
FY24-25	Crestwood (Foothill-Loma Vista)		0.87	$73,250
FY24-25	Lynbrook (Crestwood-end of cul-de-sac)		0.39	$45,000
		Totals	**4.65**	**$398,000**
FY25-26	Rubicon (Telephone-Brazo's Court)		0.97	$83,000
FY25-26	Potomac (Kennebec-North Bank)		0.72	$63,250
FY25-26	Regis (Albion-Loma Vista)		0.51	$45,500
FY25-26	Brevard (Loma Vista- 285' N/O Albion)		0.64	$55,000
FY25-26	Albion (Brevard-Victoria)		0.45	$41,100
FY25-26	Drexel (Loma Vista- Albion)		0.52	$46,000
		Totals	**3.81**	**$333,850**

Year	Project	Lane Miles	Cost Estimate
FY26-27	Cedar (Arapaho-75' N/O Hupa)	0.47	$43,000
FY26-27	Crestmont (Fairpoint-Greenhill)	0.32	$32,000
FY26-27	Fairpoint (Crestmont-Sunridge)	0.18	$15,500
FY26-27	St Pauls Drive (Loma Vista-San Pablo)	0.21	$22,500
FY26-27	Alameda (Seahawk-Moon)	0.55	$48,000
FY26-27	Crescent (Johnson-Sherwin)	0.53	$48,000
FY26-27	Shoshone (Cameron-Cedar)	0.78	$64,750
	Totals	**3.04**	**$273,750**

Exhibit J - Five-Year Scheduled In-House Paving Plan

Appendix A – Map of Completed Projects by Year

The map on the following page shows the completed resurfacing and slurry seal projects by three-year periods starting in 2006-2009.


Streets Treated Since 2006
Ventura Av.
Olive St.
Poli St.
Santa Clara St.
Thompson Bl.
Seaward Av.
Pierpont Bl.
Harbor Bl.
Main St.
Loma Vista Rd.
Aurora Dr.
Colina Vista
Foothill Rd.
Telegraph Rd.
Darling Rd.
Telephone Rd.
Wells Rd.
Thille St.
Ralston St.
Market St.
Johnson Dr.
Bristol Rd.
Victoria Av.
Olivas Park Dr.
Year
2006 - 2009
2010 - 2013
2014 - 2016
2017 - 2018
2019 - 2021
N
1 Inch =1 Mile
Miles
0
0.5
1
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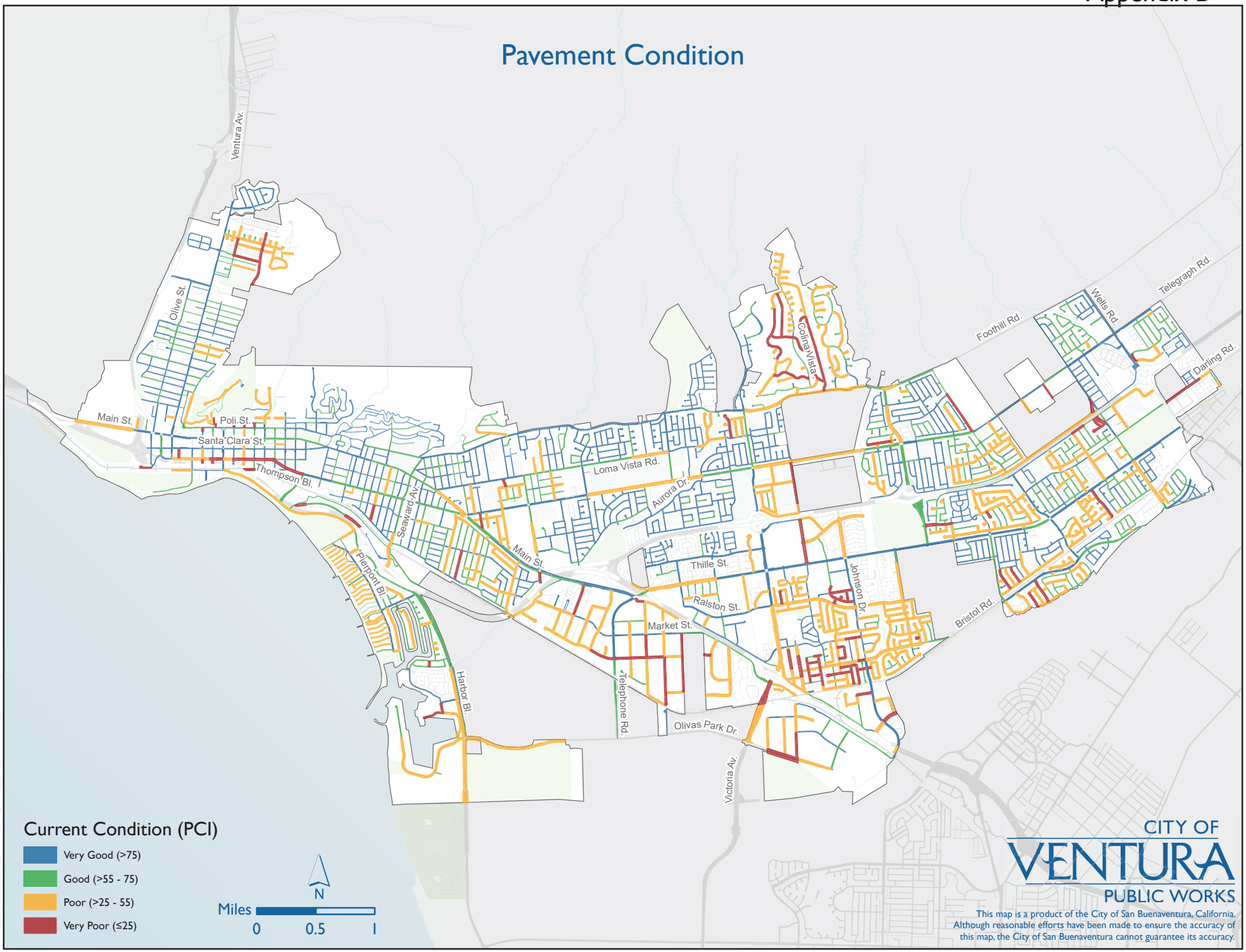
Although reasonable efforts have been made to ensure the accuracy of
this map, the City of San Buenaventura cannot guarantee its accuracy.

Appendix B – Maps of Current PCI Ratings

The following pages contain the maps listed below showing the current PCI ratings for the given street type.

- All Streets
- Arterials
- Collectors
- Residential Streets


Pavement Condition
Ventura Av.
Olive St.
Main St.
Poli St.
Santa Clara St.
Thompson Bl.
Seaward Av.
Pierpont Bl.
Harbor Bl.
Main St.
Loma Vista Rd.
Aurora Dr.
Collina Vista
Foothill Rd.
Wells Rd.
Telegraph Rd.
Darling Rd.
Thille St.
Ralston St.
Market St.
Johnson Dr.
Bristol Rd.
Telephone Rd.
Olivas Park Dr.
Victoria Av.
Current Condition (PCI)
Very Good (>75)
Good (>55 - 75)
Poor (>25 - 55)
Very Poor (≤25)
N
Miles
0
0.5
1
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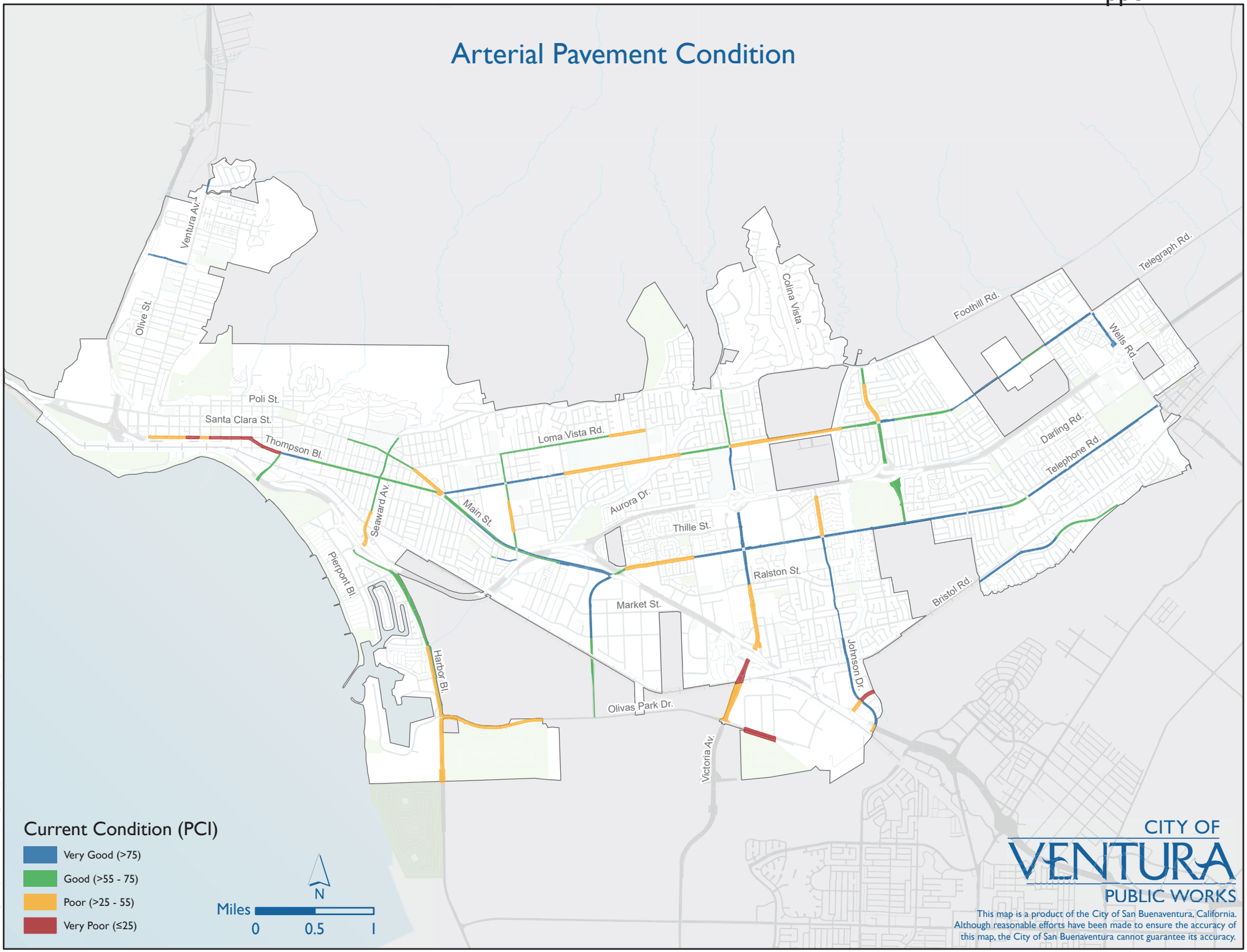
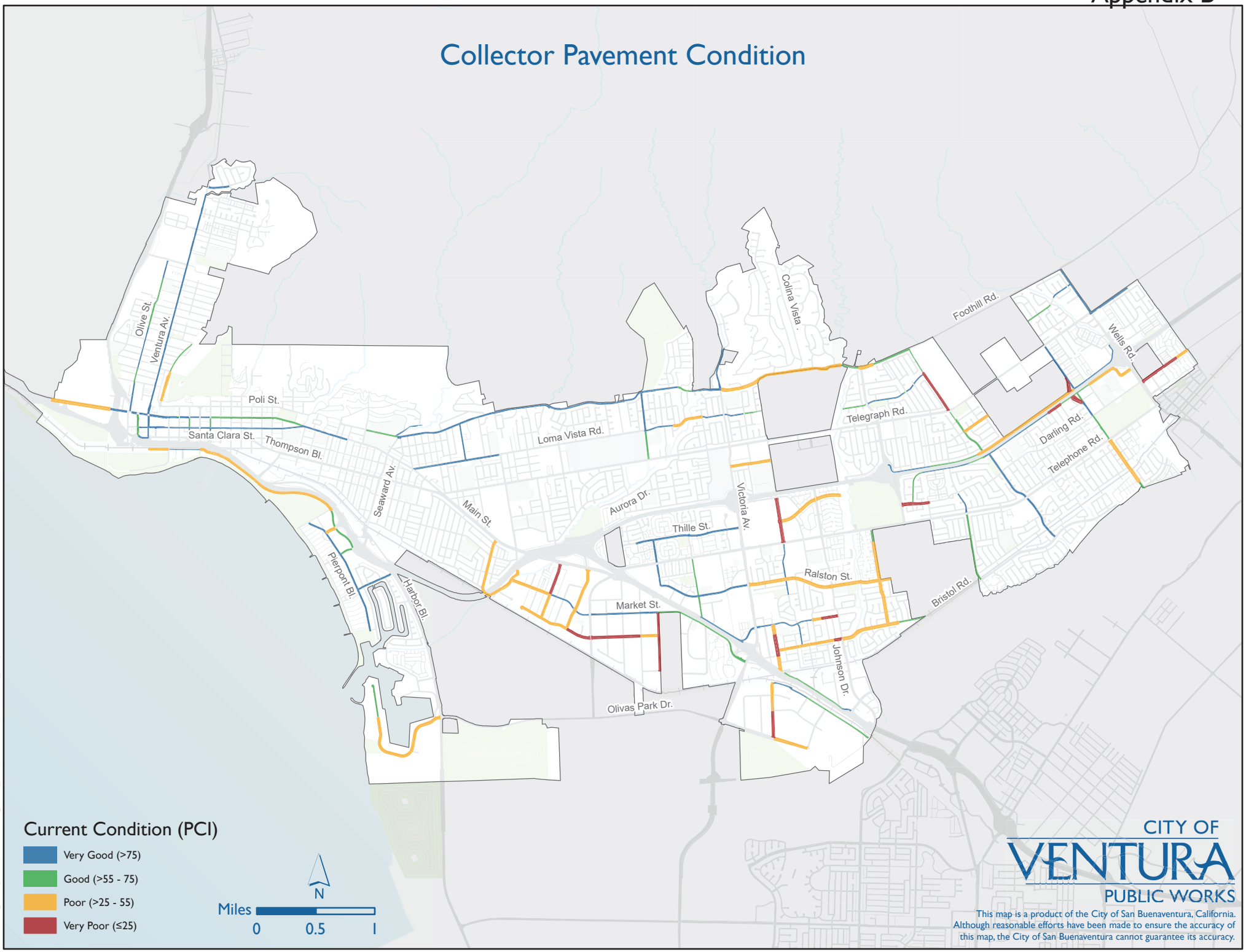
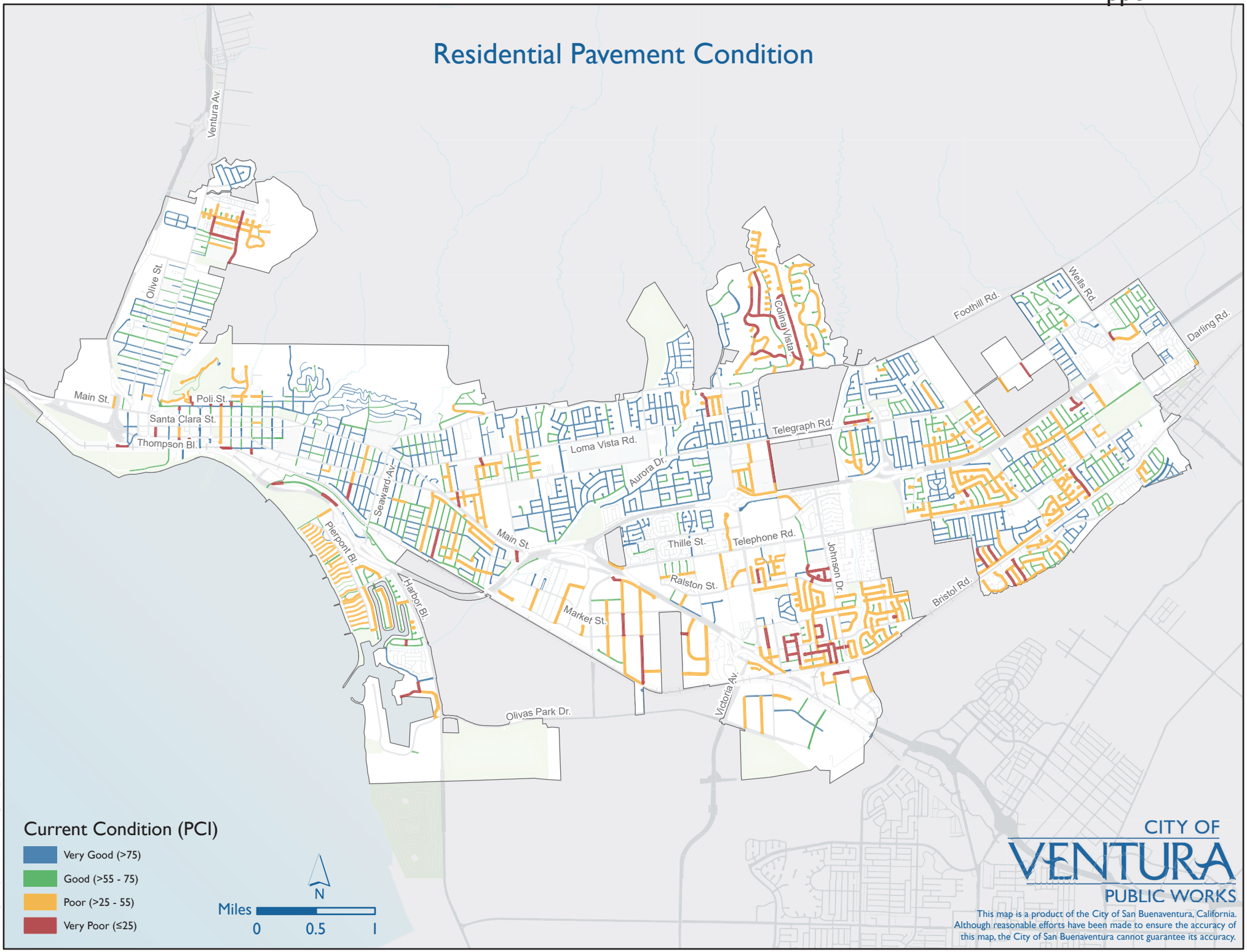
Arterial Pavement Condition



Collector Pavement Condition




Residential Pavement Condition
Ventura Av.
Olive St.
Main St.
Poli St.
Santa Clara St.
Thompson Bl.
Seaward Av.
Pierpont Bl.
Harbor Bl.
Main St.
Loma Vista Rd.
Aurora Dr.
Colina Vista
Telegraph Rd.
Foothill Rd.
Wells Rd.
Darling Rd.
Thille St.
Telephone Rd.
Johnson Dr.
Ralston St.
Market St.
Bristol Rd.
Victoria Av.
Olivas Park Dr.
Current Condition (PCI)
Very Good (>75)
Good (>55 - 75)
Poor (>25 - 55)
Very Poor (≤25)
N
Miles
0
0.5
1
CITY OF
VENTURA
PUBLIC WORKS
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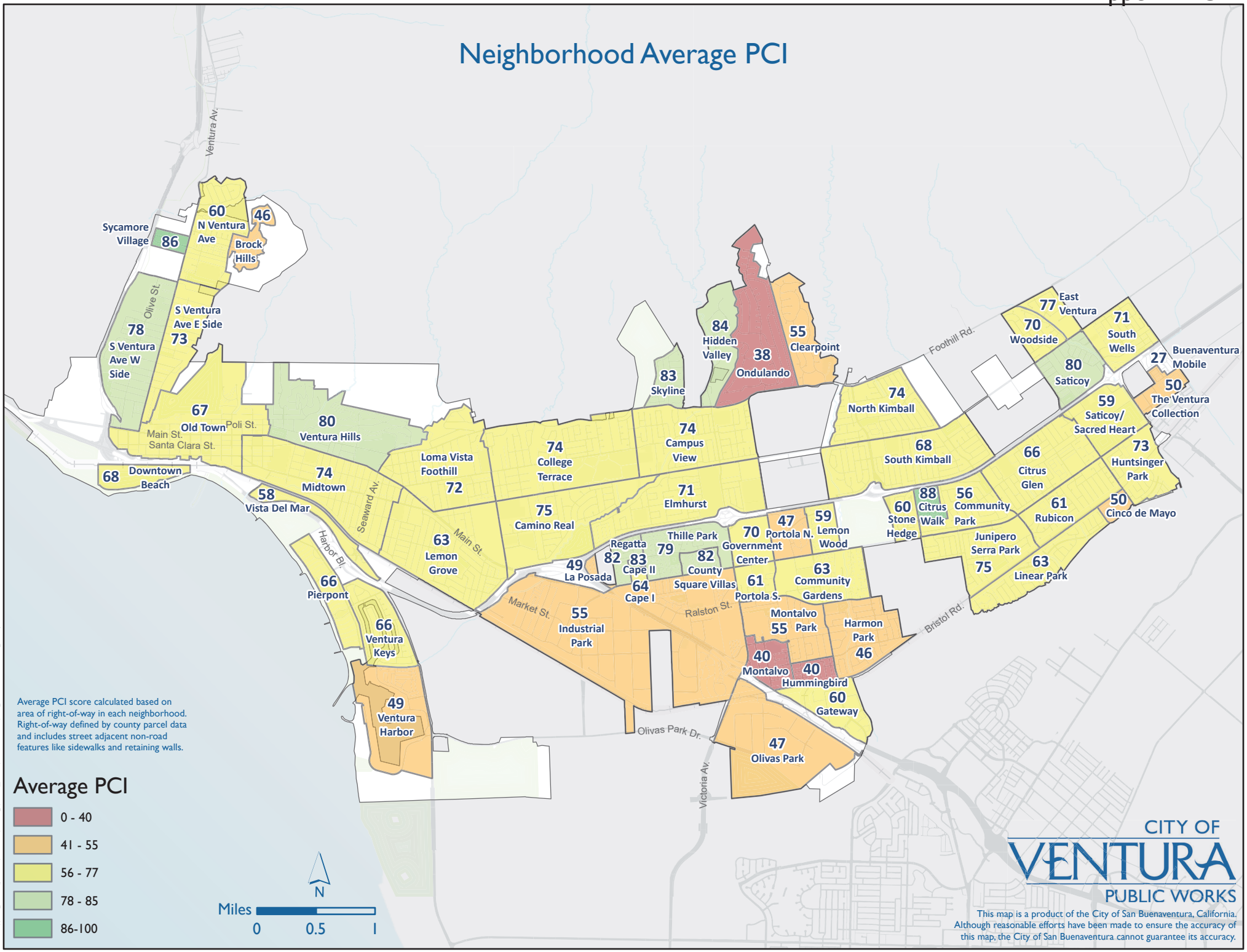
this map, the City of San Buenaventura cannot guarantee its accuracy.

Appendix C – Maps of Current PCI Ratings by Neighborhood

The following pages contain the maps listed below showing the current PCI ratings for the given street type.

- All Streets
- Arterials
- Collectors
- Residential Streets


Neighborhood Average PCI
Sycamore Village 86
60 N Ventura Ave
46 Brock Hills
78 S Ventura Ave W Side
73 S Ventura Ave E Side
67 Old Town
80 Ventura Hills
68 Downtown Beach
74 Midtown
58 Vista Del Mar
74 Loma Vista Foothill
72
74 College Terrace
74 Campus View
75 Camino Real
71 Elmhurst
63 Lemon Grove
66 Pierpont
66 Ventura Keys
49 Ventura Harbor
49 La Posada
82 Regatta
83 Cape II
64 Cape I
79 Thille Park
82 County Square Villas
70 Government Center
47 Portola N.
61 Portola S.
59 Lemon Wood
63 Community Gardens
55 Industrial Park
55 Montalvo Park
40 Montalvo
40 Hummingbird
46 Harmon Park
60 Gateway
47 Olivas Park
84 Hidden Valley
38 Ondulando
55 Clearpoint
83 Skyline
74 North Kimball
68 South Kimball
77 East Ventura
70 Woodside
71 South Wells
80 Saticoy
27 Buenaventura Mobile
50 The Ventura Collection
59 Saticoy/ Sacred Heart
73 Huntsinger Park
66 Citrus Glen
88 Citrus Walk
56 Community Park
60 Stone Hedge
61 Rubicon
50 Cinco de Mayo
Junipero Serra Park
75
63 Linear Park
Ventura Av.
Olive St.
Main St.
Santa Clara St.
Poli St.
Seaward Av.
Harbor Bl.
Main St.
Market St.
Ralston St.
Foothill Rd.
Bristol Rd.
Olivas Park Dr.
Victoria Av.
Average PCI score calculated based on area of right-of-way in each neighborhood. Right-of-way defined by county parcel data and includes street adjacent non-road features like sidewalks and retaining walls.
Average PCI
0 - 40
41 - 55
56 - 77
78 - 85
86-100
N
Miles
0 0.5 1
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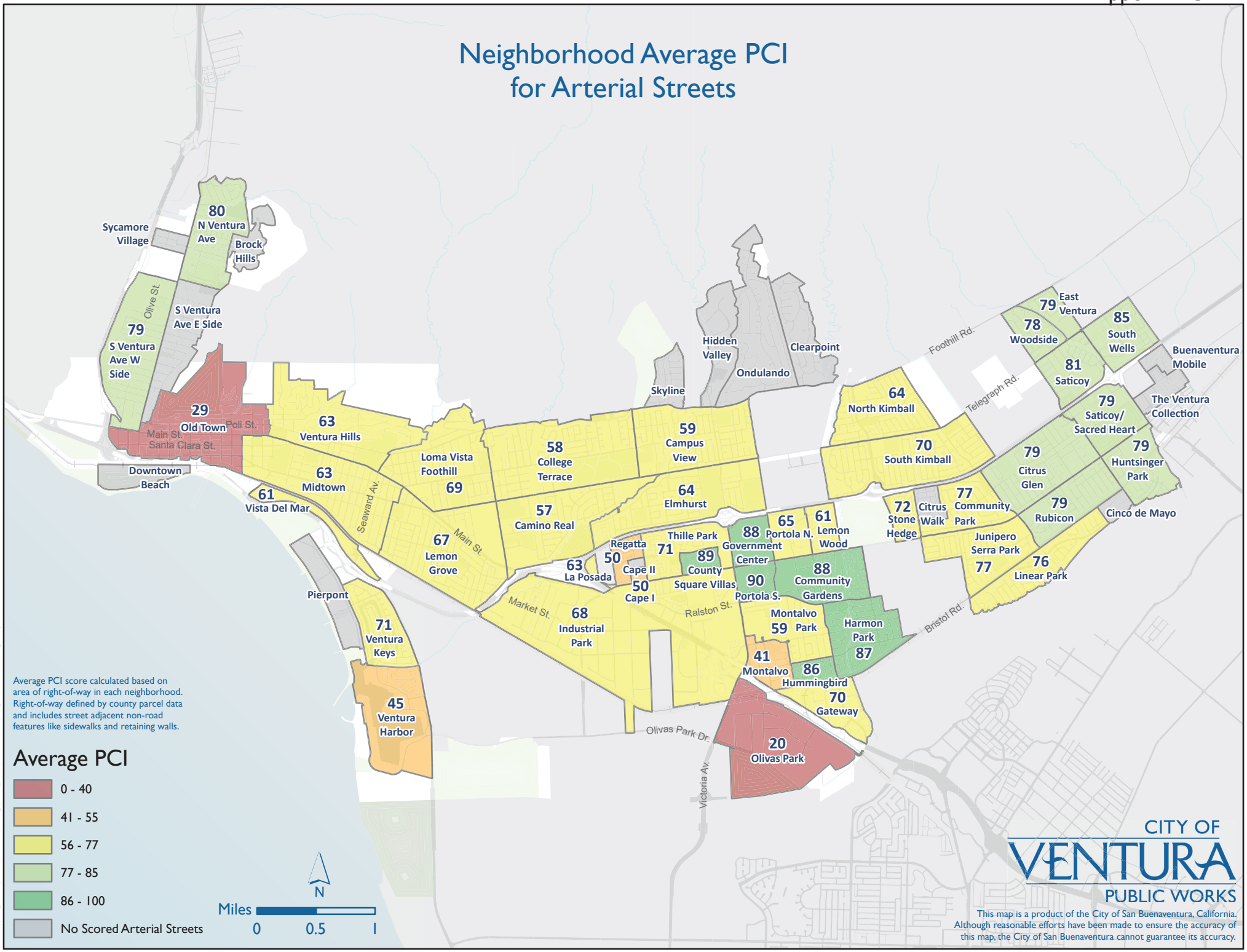
Neighborhood Average PCI
for Arterial Streets
80 N Ventura Ave
Sycamore Village
Brock Hills
79 S Ventura Ave W Side
Olive St.
S Ventura Ave E Side
29 Old Town
Poli St.
Main St.
Santa Clara St.
Downtown Beach
63 Ventura Hills
63 Midtown
61 Vista Del Mar
Seaward Av.
Loma Vista Foothill
69
58 College Terrace
59 Campus View
Skyline
Hidden Valley
Ondulando
Clearpoint
64 Elmhurst
57 Camino Real
67 Lemon Grove
Main St.
Pierpont
71 Ventura Keys
45 Ventura Harbor
Market St.
68 Industrial Park
Regatta
50 Cape II
63 La Posada
50 Cape I
Thille Park
71
89 County Square Villas
88 Government Center
65 Portola N.
61 Lemon Wood
90 Portola S.
88 Community Gardens
Ralston St.
Montalvo 59 Park
Harmon Park
87
41 Montalvo
86 Hummingbird
70 Gateway
Olivas Park Dr.
20 Olivas Park
Victoria Av.
64 North Kimball
70 South Kimball
Foothill Rd.
Telegraph Rd.
79 East Ventura
78 Woodside
85 South Wells
81 Saticoy
Buenaventura Mobile
79 Saticoy/ Sacred Heart
The Ventura Collection
79 Citrus Glen
79 Huntsinger Park
72 Stone Hedge
Citrus Walk
77 Community Park
79 Rubicon
Cinco de Mayo
Junipero Serra Park
77
76 Linear Park
Bristol Rd.
Average PCI score calculated based on area of right-of-way in each neighborhood. Right-of-way defined by county parcel data and includes street adjacent non-road features like sidewalks and retaining walls.
Average PCI
0 - 40
41 - 55
56 - 77
77 - 85
86 - 100
No Scored Arterial Streets
N
Miles
0
0.5
1
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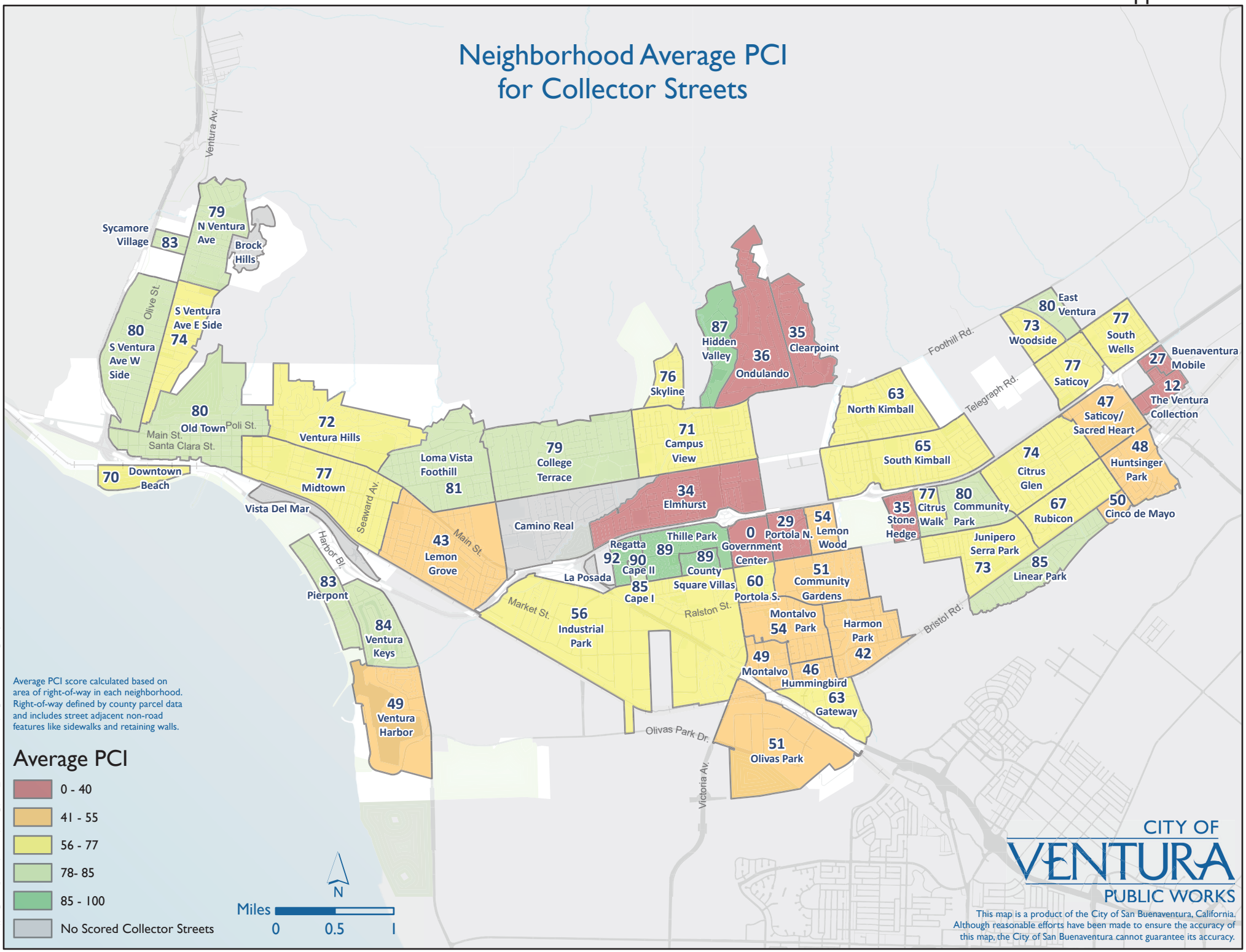
Neighborhood Average PCI
for Collector Streets
Sycamore Village 83
79 N Ventura Ave
Brock Hills
Olive St.
80 S Ventura Ave W Side
S Ventura Ave E Side 74
80 Old Town
Poli St.
Main St.
Santa Clara St.
70 Downtown Beach
72 Ventura Hills
77 Midtown
Vista Del Mar
Seaward Av.
Loma Vista Foothill 81
79 College Terrace
43 Lemon Grove
Main St.
Harbor Bl.
83 Pierpont
84 Ventura Keys
49 Ventura Harbor
Camino Real
76 Skyline
87 Hidden Valley
36 Ondulando
35 Clearpoint
71 Campus View
34 Elmhurst
Regatta 92
Thille Park 89
Cape II 90
La Posada
Cape I 85
County Square Villas 89
0 Portola N.
29 Government Center
54 Lemon Wood
60 Portola S.
51 Community Gardens
Market St.
56 Industrial Park
Ralston St.
Montalvo Park 54
Harmon Park 42
49 Montalvo
46 Hummingbird
63 Gateway
Olivas Park Dr.
51 Olivas Park
Victoria Av.
Bristol Rd.
Foothill Rd.
Telegraph Rd.
63 North Kimball
65 South Kimball
80 East Ventura
73 Woodside
77 South Wells
77 Saticoy
27 Buenaventura Mobile
12 The Ventura Collection
47 Saticoy/ Sacred Heart
48 Huntsinger Park
74 Citrus Glen
50 Cinco de Mayo
67 Rubicon
77 Citrus Walk
80 Community Park
35 Stone Hedge
Junipero Serra Park 73
85 Linear Park
Average PCI score calculated based on area of right-of-way in each neighborhood. Right-of-way defined by county parcel data and includes street adjacent non-road features like sidewalks and retaining walls.
Average PCI
0 - 40
41 - 55
56 - 77
78- 85
85 - 100
No Scored Collector Streets
N
Miles
0 0.5 1
CITY OF VENTURA
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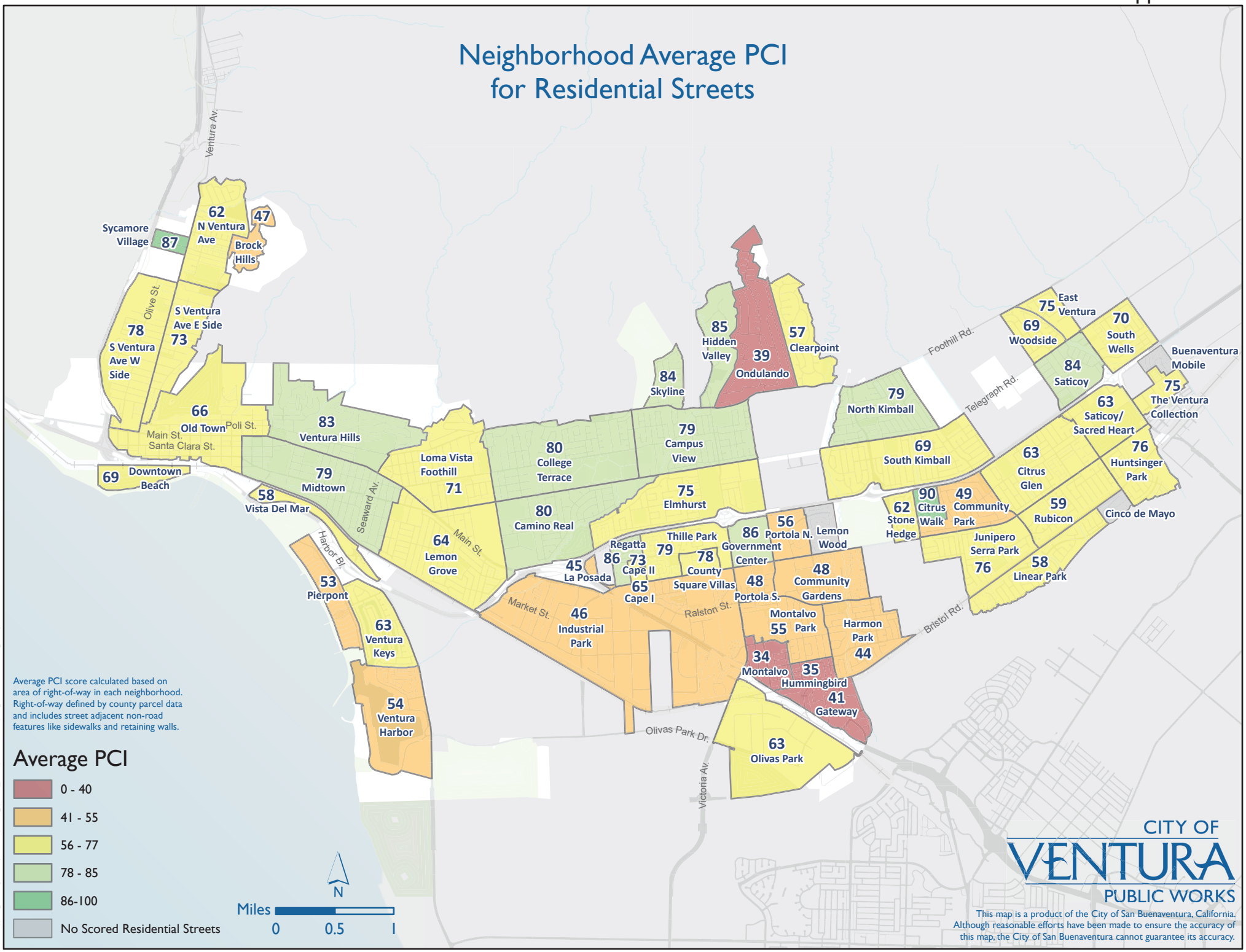
Neighborhood Average PCI
for Residential Streets
Sycamore Village 87
62 N Ventura Ave
47 Brock Hills
78 S Ventura Ave W Side
73 S Ventura Ave E Side
66 Old Town
69 Downtown Beach
58 Vista Del Mar
83 Ventura Hills
79 Midtown
Loma Vista Foothill 71
64 Lemon Grove
80 College Terrace
80 Camino Real
84 Skyline
85 Hidden Valley
39 Ondulando
57 Clearpoint
79 Campus View
75 Elmhurst
79 North Kimball
69 South Kimball
75 East Ventura
69 Woodside
70 South Wells
84 Saticoy
Buenaventura Mobile
75 The Ventura Collection
63 Saticoy/ Sacred Heart
76 Huntsinger Park
63 Citrus Glen
59 Rubicon
Cinco de Mayo
62 Stone Hedge
90 Citrus Walk
49 Community Park
Junipero Serra Park
76
58 Linear Park
56 Portola N.
86 Lemon Wood
Thille Park
Regatta
86
79
73 Cape II
65 Cape I
45 La Posada
78 County Government Center
Square Villas
48 Portola S.
48 Community Gardens
Montalvo Park 55
Harmon Park 44
34 Montalvo
35 Hummingbird
41 Gateway
63 Olivas Park
46 Industrial Park
53 Pierpont
63 Ventura Keys
54 Ventura Harbor
Ventura Av.
Olive St.
Main St.
Santa Clara St.
Poli St.
Seaward Av.
Harbor Bl.
Main St.
Market St.
Ralston St.
Foothill Rd.
Telegraph Rd.
Bristol Rd.
Olivas Park Dr.
Victoria Av.
Average PCI score calculated based on area of right-of-way in each neighborhood. Right-of-way defined by county parcel data and includes street adjacent non-road features like sidewalks and retaining walls.
Average PCI
0 - 40
41 - 55
56 - 77
78 - 85
86-100
No Scored Residential Streets
N
Miles
0
0.5
1
CITY OF VENTURA
PUBLIC WORKS
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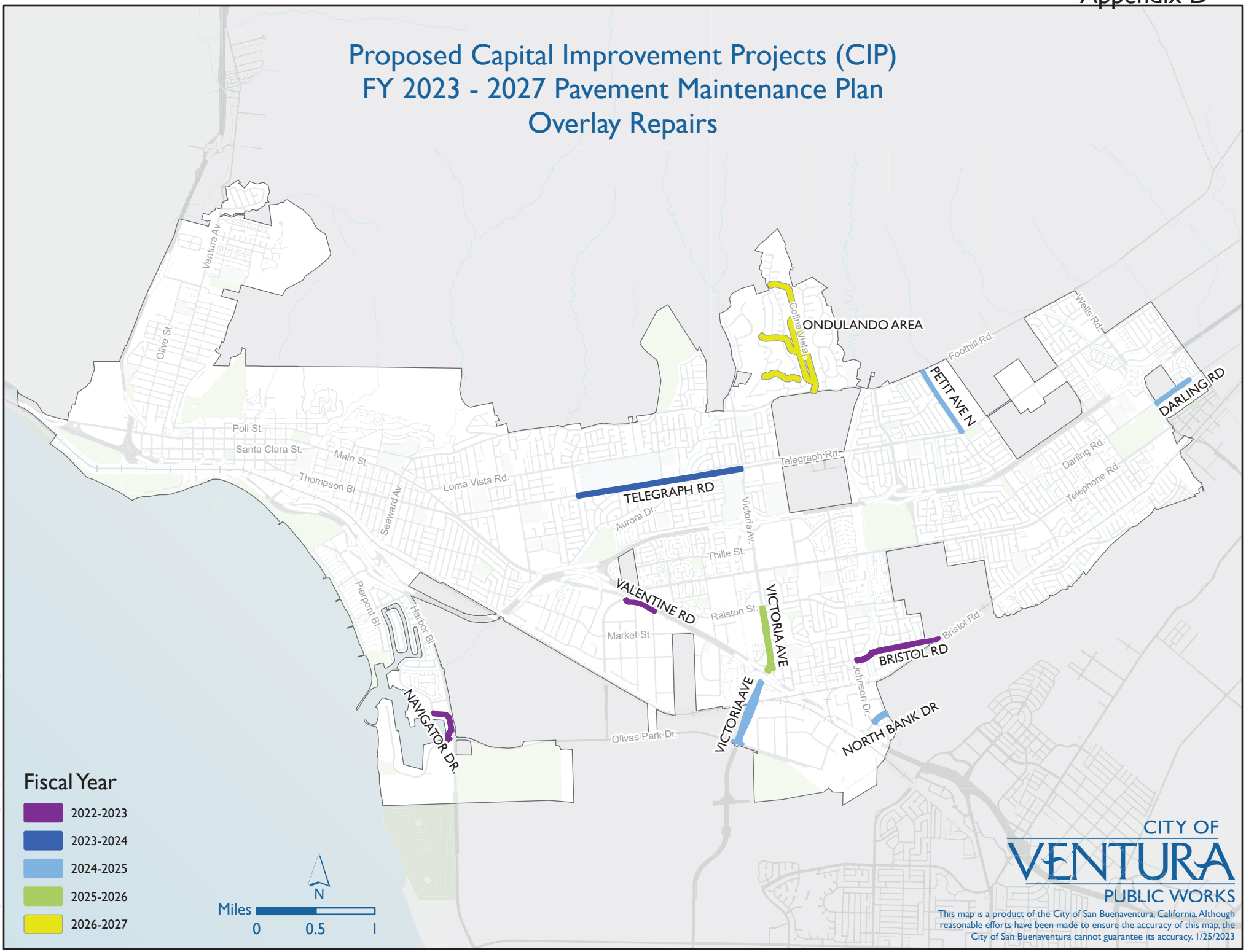
Appendix D – Maps of Projects in the Five-Year Plan

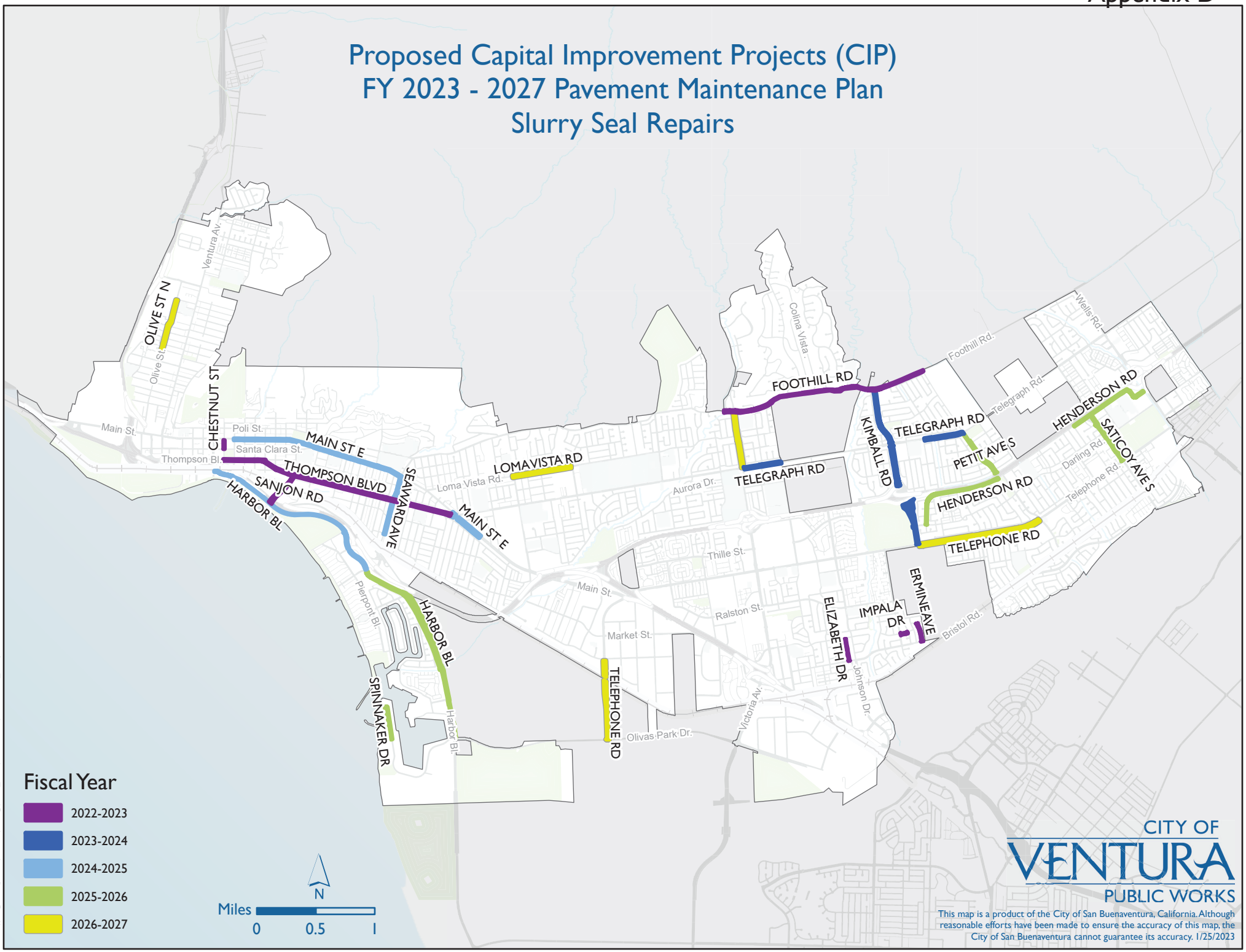
The following pages contain the maps listed below showing the planned resurfacing and slurry seal projects from FY23 – FY27.

- CIP Resurfacing Projects
- CIP Slurry Seal Projects
- In-House Resurfacing Projects
- In-House Resurfacing Projects – Detail of Montalvo Area

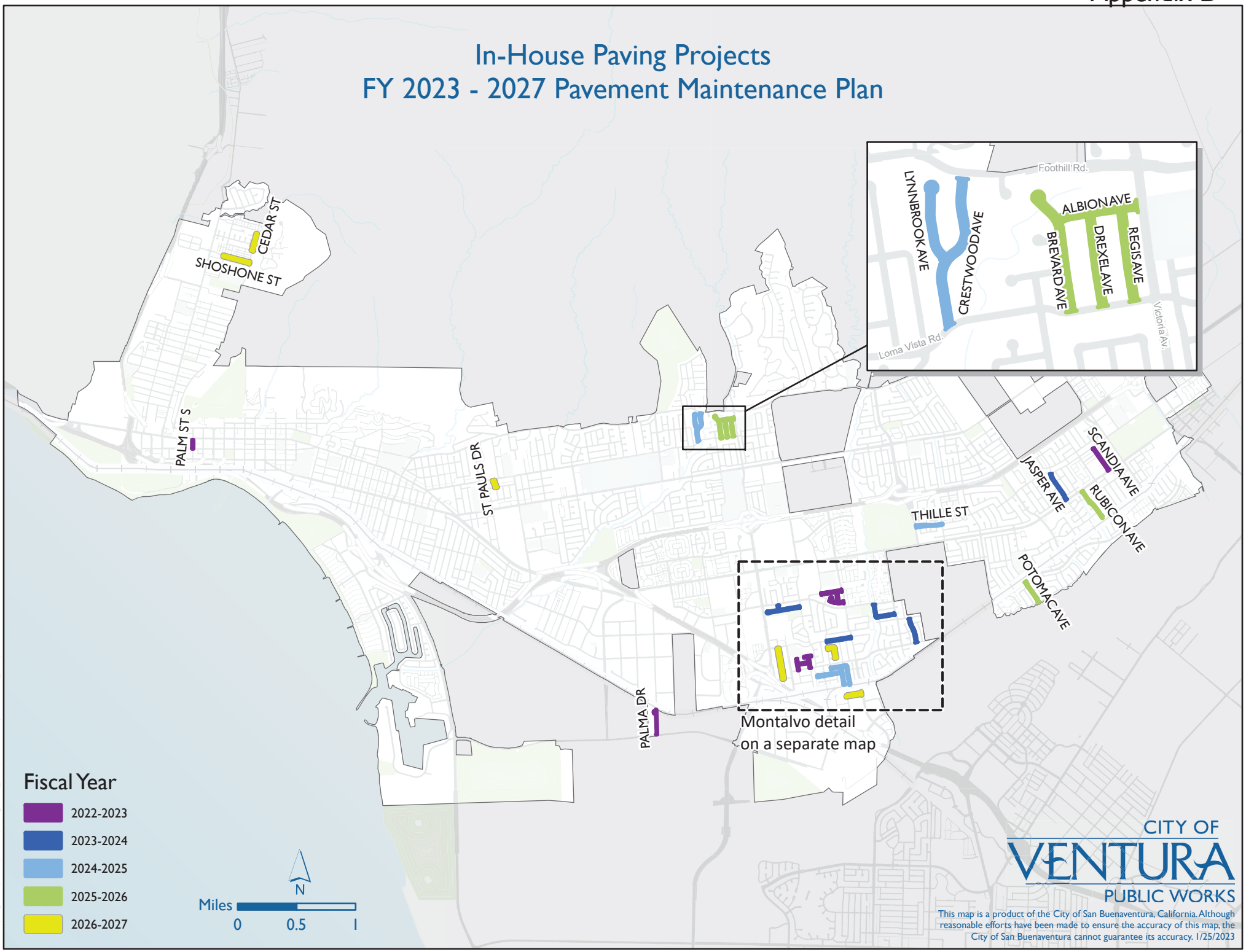
Proposed Capital Improvement Projects (CIP)
FY 2023 - 2027 Pavement Maintenance Plan
Overlay Repairs



Proposed Capital Improvement Projects (CIP)
FY 2023 - 2027 Pavement Maintenance Plan
Slurry Seal Repairs



In-House Paving Projects
FY 2023 - 2027 Pavement Maintenance Plan



In-House Paving Projects - Montalvo Detail
FY 2023 - 2027 Pavement Maintenance Plan